

WEEKLY EDITION
OF THE

PUBLISHED BY
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We have just returned from the International Bee-Keepers' Congress at New Orleans, but have neither time nor space for comments. The meeting was a large and enthusiastic one—24 States were represented including Canada. The first day's proceedings are given in this paper, and the remainder will be published in our next.

Many Letters requiring our personal attention have accumulated during our absence in the South. We shall give them our personal attention as soon as possible, and will simply ask correspondents to exercise a little patience.

The following from the *Indiana Farmer* is good and to the point:

The management of bees can only be successful when conducted with a perfect understanding of their natural history, and in accordance with the instincts which govern them.

Those wishing to engage in bee-keeping should thoroughly understand that keeping bees is not necessarily bee-keeping.

No one would ever think of closing up a coop of chickens with an inadequate supply of food to last them through the long winter months with any hopes of their surviving; yet we find many who will allow their bees to go into winter quarters short of stores, then grumble at their ill-luck in keeping bees.

The Sixth semi-annual meeting of the Western Bee-keepers' Association will be held in Unity Chapel, at St. Joseph, Mo., on Felix St., between 7th and 8th streets, on Thursday and Friday, April 9 and 10, 1885, commencing at 10 a. m. on April 9. All interested in bee-culture are invited to attend and make the meeting as interesting as possible. A full programme will be prepared and a general good time may be expected.

C. M. CRANDALL, Sec.

The International Congress.

The International Congress met at 10:30 a. m. on Tuesday, Feb. 24, 1885, as per announcement, with a good attendance from 24 States and Canada.

Upon motion, Mr. S. C. Boylston, of South Carolina, was elected temporary President, and T. G. Newman, of Ills., temporary Secretary. The chairman said that he was highly honored by having been called to the chair of such a meeting, the influence of whose members was felt all over the American Continent, and hoped there would be much good done by the meeting of so many successful honey-producers. The deliberations were to extend to every subject of practical apiculture, and there would be a thorough sifting of opinions on all the subjects discussed.

The permanent officers were elected as follows: President, Dr. J. P. H. Brown, of Augusta, Ga.; Secretary, T. G. Newman, Chicago, Ills.; Treasurer, Paul L. Viallon, Bayou Goula, La.; and one Vice-President for each State or Province represented.

Representatives from several bee-keepers' societies passed in their credentials, and they were welcomed by the Congress.

A paper was read from Mr. S. F. Pettit, of Belmont, Ont., as follows:

HONEY-PRODUCTION IN CANADA.

God has clothed and beautified nearly all parts of His footstool with flowers, that fill the air with rich fragrance and delight the eye of all. The humble poor as well as the opulent, may enjoy them. But these are not the only uses for which they are designed. They each secrete a particle of nectar, some more, and some less. The Dominion of Canada is no exception to the general rule; but, on the contrary, from the Atlantic Ocean to the Pacific, and from the Great Lakes and the 49th parallel, to the frozen regions of the North, flowers everywhere abound in great luxuriance and profusion.

In Ontario, Quebec, and the Maritime Provinces, the greatest honey-producing tree in the world, perhaps, the linden or basswood, grows abundantly. The soft maple and sugar-maple yield no inconsiderable quantity. From the latter, average colonies will, in favorable seasons, store 20 lbs. or more.

Then we have the fruit trees, grape-vines and willows, both small and great, in endless variety. Of weeds, at present developments, the Canadian thistle stands first on the list as a honey-producer, but—"beware! beware! O, beware!" Then comes the golden-rod, ox-eyed daisy, the asters, etc., besides many others which go to make up the list.

But the plants to which bee-keepers in the Provinces named, are most indebted, and to which they look for their greatest and surest supply, are the different varieties of clover. Where the forests are cleared away, these Provinces are emphatically a land of grass; that is, the grasses here attain to great perfection, and where the land remains neglected, it is soon covered with vegetation, white clover doing its full share.

The power of the linden, or basswood, to produce honey when all the conditions are favorable, is a matter of wonder and astonishment. About July 15, the tree is profusely decorated, yea, nearly covered, with cream-colored blossoms so filled with honey that the limbs literally bend under their loads of coveted sweets. At this time, if a

limb be struck a sharp blow from beneath, the honey will fall to the ground in a sweet shower. But unfortunately, the linden does not, on an average, at least in my section of country, produce honey more than about 2 years out of 5. Every other year is the rule, and besides that, caterpillars devour the foliage about 3 years out of 10.

Linden honey is aromatic, of high, pleasant flavor, clear, and of sparkling brightness. When well ripened it granulates solid. Clover honey is clear and bright, though slightly tinged with amber, is very sweet, although a clearly perceptible acidity is always present. It also candies solid. Thistle honey is clear and bright, of fine quality, and peculiarly pleasant. It candies slowly. These immaculate honeys have each an exquisitely delightful flavor peculiarly its own.

In Keewatin, Manitoba and the "Great Lone Land" or Canadian Northwest, the sources of honey, at present, are confined principally to prairie flowers, which are very plentiful from early spring until frost. Willows abound, and will add considerably to the wealth of the bee-keeper; but, if I am correctly informed, the honey is of an inferior quality; therefore we must patiently await the developments which the near future will surely bring about in that great country. Both the soil and the climate seem to be peculiarly favorable to the production of white clover, and it is rapidly taking possession of the soil where cultivation has destroyed the native grasses.

I now desire to point out some of the advantages the Dominion of Canada possesses over the South, in the production of honey:

1. Clover springs up spontaneously over all the land.
2. The summer season is comparatively short, but the honey-flow generally is "right smart;" and then, when the honey season is over, bees soon go into winter quarters, and do not rob and destroy one another, for the simple reason that they cannot do so.
3. The sun shines each day, in the Dominion of Canada, from 2 to 4 hours longer than at New Orleans; but that is not all; darkness does not come on so rapidly after sunset as it does in the South. In a large portion of Canada, twilight lingers all night, and bees can work long after sundown.

Now, when we take into consideration the great territorial extent comprised in the Dominion of Canada, the fertility of her soil, the beauty of her summers, and the length of her summer days, may we not with safety conclude that by-and-by Canada will be able to produce hundreds of thousands of tons of honey annually for foreign markets?

Perhaps some one will say, "But what about your killing winters?" Well, I will state that although Canadian winters are long and sometimes terribly severe, yet, withal, they are pleasant, bracing and enjoyable; and it is now a well established fact that bees, when properly housed, will remain healthy for 5 months or more without a cleansing flight.

All these advantages are not the only requisites necessary to make bee-keeping the occupation which we delight so much to laud to the skies; but the question of a market will soon be one of the most difficult problems that the apiarist will have to solve. Did you ever think of it, that nearly all lands within the temperate and torrid zones, whether mountains or valleys, hills or dales, as well as the isles of the seas—all, everywhere, invite the labors of the honey-bee?

We talk of wheat belts, corn regions, the cotton fields of the South and the barley districts; we speak of the favorite locality of the pear and the apple, the orange and the lemon, etc., and each has its favorite and somewhat limited locality, but flowers and honey abound almost everywhere.

Now, add to all this the stubborn fact that California, in 1884, sent to the markets of Europe, thousands of tons of honey at an average of less than 5 cts. per lb., and we will have some crude idea of what our honey will soon have to compete with in the markets of the world.

Thos. G. Newman (Ills.) remarked that Manitoba could not be favorable for bee-culture—the season was too short and there was a lack of honey-producing flowers.

Mr. Wallace (Ontario) said that he fully agreed with Mr. Pettit's paper and mentioned the fact that the Canada honey exhibit at Toronto was the largest ever made in America.

The Secretary read the essay of James Heddon, Dowagiac, Mich., as follows:

VARIETIES OF HONEY-BEES — POINTS OF SUPERIORITY AND INFERIORITY CONSIDERED.

In giving you my conclusions, upon the above subject, conclusions formed from continued careful experiment with German and Italian bees, of the various strains, and observation and conversation with friends who have experimented with Cyprians, Syrians and Carniolans, I will say that I believe that all these so-called races should properly be divided into two—the brown and yellow bees; of which I believe the Italian and German represent the best of the two classes.

I find that great radical differences in points of character are not found between Cyprians and Syrians, or Germans and Carniolans, but between the brown and yellow bees, of whatever name they may be called. Now, if one race or the other possessed all points of superiority, and the other none of them, any discussion regarding "best bees," would be a thing of the past; but as it is a fact that points of superiority and inferiority, are about balanced between the races, it leaves a wide field in which the apiarist may well use his judgment and tact.

I think all practical honey-producers will admit that the following points of differentiation between the two races, not only illustrate more radical differences, but points of more importance.

Let us mention of the yellow bees, the following valuable points of superiority:

1. Protection of their home against enemies. This characteristic is of greater value to the novice than the specialist; or, those living in the South gaining no assistance from severe winters.

2. As a rule, they have a longer proboscis. This point is of advantage in such locations as, at certain times of the year, abound with flowers which have many nectaries too deep for honey-bees.

While it is more or less correct to say that the Italians stick better to their combs, are more courageous, will remain in any new location better, are less liable to quarrel when different colonies are united, though fiercer in disposition, are less liable to sting, because they are less liable to take wing, that the queen is more readily found, etc.—all these are minor points, and even the second, can hardly be called a major point.

Now, let us see about the brown-German bees: 1. They are superior comb-builders, making wax more readily, of better color, capping over their combs quicker and whiter, leaving a space between the honey surface and cap which not only much improves the appearance but enhances the price two or three cents per lb., securing a more ready sale with that advance, and enables the honey to bear a humid atmosphere for a considerable time, without any material deterioration.

The foregoing was of not so much importance 12 and 15 years ago, when the honey supply was unequal to the demand and buyers came hundreds of miles to secure our crop—let it look as it might, if it was only "honey;" but, in these days, it is to me the most important point of superiority to be found with any race of bees.

2. They are much less inclined to swarm. This is an important trait, especially to the larger special producer; also to any who cannot give their apiaries close attention. Either because they have too many apiaries for the help employed, or too few colonies in one apiary to afford them continual attention.

Minor points of superiority are, that they build the most worker comb and straighter (some may wonder why I call straight worker comb-building a minor point; because of the otherwise, wise and general use of full sheets of comb foundation; but in cases where such are not used, this trait of the brown German bees is a major point, greatly in their favor), enter surplus receptacles more readily, in cases where the apiarist has bad communications thereto, are more easily shaken from the combs (sometimes an advantage and sometimes not), and are more sensibly affected by the loss of the queen. (This aids us in many manipulations.)

When swarming, these bees alight sooner and with more certainty, than Italians; a swarm hives more readily, they can be driven more easily, heeding the admonitions of the smoker more promptly, etc.

I do not doubt the wisdom of choosing the pure Italian bees, by those who live in the South, and make extracted honey a specialty; but for those who live in the North, and produce comb honey (which I think more profitable wherever the bulk of the crop is light colored), the pure, brown-German bee is radically my preference over any Italian, Cyprian or Syrian, or crosses between them.

You may ask what of my crosses? This strain of bees I have been working some six or seven years, hoping to combine the best and most essential points of character of the brown German and leather-colored Italian bees. I am forced to admit that my success has been only partial. I consider this strain to-day ahead of all other bees, as a general-purpose bee, i. e. to be kept in an apiary where both comb and extracted honey is produced as a crop. But where one is running exclusively for comb honey, we (my students and self) last season came to the unanimous conclusion that while we preferred this strain, to pure Italians,

(of which we had many colonies) we yet preferred the pure, brown-German bee to all, for the production of comb honey as a specialty. In this cross I have succeeded, to my satisfaction, in retaining the valuable characteristics of the Italian bee, but not so well in retaining those of the pure German—so very valuable to the producer of comb honey.

While I am willing to pit colony for colony of this strain, against an equal number of Italians, for steadfastness to the combs and its consequent behavior; longer-tongue, and consequent honey-gathering qualities, and faithful protection of their home against all enemies, I cannot truthfully say that they will compare favorably with an equal number of colonies of the pure-brown Germans for the valuable comb-honey and non-swarming qualifications, as above stated.

New conditions and demands, force us to different fixtures. In many things, I find that what was best 15 years ago, (and would be to-day, were conditions the same) are not best for the present. I am convinced that there is going to be a turning backward from the yellow to the brown bee. We are as yet little acquainted with the Carniolans; should it prove that this strain is equal to the Germans (if nothing more), the change would likely be done by introducing them.

Purchasers of queens prefer something new; venders prefer the new prices. This branch of the darker race is already being praised (above the Italians) for the same qualifications possessed by the brown Germans. It is however further declared that they excel all in good nature; but what, to me, more than off-sets that, is an accompanying admission that they are as bad or worse than the Italians about swarming. My great objection to the swarming impulse, is its hindrance to the perfection of a system for managing out apiaries without attending them continually, that we may with profit produce the cheap honey of the future.

To conclude I will say to all, think these things over and digest them well before you invest money in queen bees. Have there not been many dollars invested (and honestly to, at both ends of the deal) that have never been re-realized?

Mr. Wallace (Ont.) said that the native bees capped the honey so that it was whiter—and he thought that they gave it a double capping.

Paul L. Viallon (La.) said that he could manage either race of bees, but it must be said that in good seasons they would gather honey about the same, but in poor seasons the Italians came out very far in the lead.

O. F. Bledsoe (Miss.) said that bee-culture with Italian bees meant modern bee-keeping—movable frames, etc. With black bees, it was the very opposite. He disagreed with Mr. Heddon's essay.

Dr. Hodgson (S. C.) remarked that the minor points mentioned by Mr. Heddon were major ones—and his major points were but minor ones. The Italian bees are infinitely superior to

any native bees. If bee-culture is to return to the keeping of black bees, then he would retire from the pursuit.

Mr. Killo (Texas) said that native bees were not so prolific as the Italians.

Judge Andrews said that he totally disagreed with Mr. Heddon's essay, and would not keep bees at all, if the Italians were to be discarded.

A general discussion ensued, on the black bees, moth-worms, and a variety of subjects, not to the point.

The President remarked that as it had been suggested that many wanted to see the Exhibits in the World's Exhibition, it might be desirable to decide upon the number of meetings to be held each day. Upon motion, the meeting adjourned until 9 a. m., Wednesday, when many more bee-keepers were expected to arrive.

SELECTIONS FROM OUR LETTER BOX

Bees Are all Right.—A. W. Fisk, Bushnell, Ill., on Feb. 26, 1885, writes as follows:

The last season was a very poor one for honey and bees in this locality, and we are having a very severe winter with a great quantity of snow. I am in hopes, however, that the deep snow will help to protect the bees through the coldest weather; for many bee-keepers in this section leave their bees on the summer stands with little or no protection. I put 23 colonies into the cellar and have a few colonies on the summer stands in double-walled, plastered hives. So they are all right. We are expecting wonders from our bees next season, for we have had two poor seasons in succession. Bee-men in this vicinity are waking up to the subject of bee-keeping, and last fall they organized a society called the "Progressive Bee-Keepers' Association of Western Illinois." Being its "executive," I am much interested in its welfare, and I may inform the readers of the BEE JOURNAL concerning its progress. We shall try and do our "level best" at progressive bee-keeping.

Report, from David Watterson, Bristow, Iowa, on Feb. 21, 1885:

Last spring I had 14 colonies of bees and during the season I increased them to 28 colonies, and took 500 lbs. of comb honey.

Report, etc.—11—J. E. Cady, (68-205), Medford, Minn., on Feb. 24, 1885, writes as follows:

My bees are wintering finely. I have failed to find one dead colony thus far. The mercury at present is 42° above zero in my cellar. On Aug. 7, 1884, I bought an entire apiary of 133 colonies of bees, with the knowledge that they had no honey. The fall being a very poor one for honey, I had to feed 70 out of the 111 colonies of the bees which I have in my cellar.

The combs were very heavy with pollen and I have purposely left those in the hives of the colonies which I fed. I fed two barrels of coffee A sugar, giving 10 lbs. of sugar and 4 lbs. of water each, to the most of them. All of them had a little honey, perhaps 4 to 10 pounds. About 30 colonies had honey enough of their own on which to winter, and to the remaining 11 colonies I gave honey from my old apiary. I find that by dropping the frame proper 5-6 or 3/4 of an inch below the top-bar (as illustrated on page 9, in Mr. Heddon's article) and making the top-bar 1 1/4 inches wide, it makes a very convenient and cheap honey-board in connection with a reversible frame.

Great Loss of Bees.—Wm. Malone, Oakley, Iowa, on Feb. 23, 1885, says:

Last fall there were 231 colonies of bees in Liberty township (Iowa), and I am satisfied that there will not be 50 of them alive on May 1, 1885. Every one that I have heard from has lost all of his colonies. I have lost 18 colonies out of 30. I have 8 colonies in a "clump" that I have not yet examined. The trouble is starvation, with honey in the next comb. There were no signs of bee-diarrhea until brood-rearing commenced. We all winter our bees on the summer stands with 10 combs in each hive. If the bees had been on 6 frames with the same amount of honey, they would have wintered all right. The present winter beats that of 1880—81.

The Weather and Bees.—F. A. Burrill, Cuba, N. Y., on Feb. 25, 1885, writes thus:

We are having a severe winter here. My bees are all on the summer stands with straw packed over the brood-chambers. It is my first experience of wintering bees in that way and I do so from necessity. To-day the weather is quite warm and it is thawing some.

Report, from Aaron Jennings, Medusa, N. Y., on Feb. 17, 1885:

I have 250 colonies of bees in my bee-cellar, and the hives are tiered up four high on 2x3 scantlings. They are as quiet as need be, and the mercury is from 40° to 45° above zero. When the weather gets warm, towards spring, I put a tub of ice in the cellar to keep the temperature down. I never take away the pollen, have never fed any sugar syrup, and I never lost any colonies with bee-diarrhea, when put into the cellar about Nov. 1, or any time before we have had very cold weather. In the fall of 1881 I bought 25 colonies of bees which were left out until after we had 3 or 4 days of zero weather. I then put them into my cellar and towards spring they had the diarrhea; 8 colonies died with it, 10 came very nearly dying, and the other 7 were weak. I am satisfied that the cold was what caused it. If Mr. Norris, of Norrisville, Wis., will take off the bottom-boards and set his hives up on scantlings, he will not have any water in them, nor any dead bees in the way.

Trouble in Wintering Bees.—L. Reed, Orono, Mich., on Feb. 27, 1885, says:

I have kept bees for 30 years, and I thought that I knew all about it, but I find that I can learn something yet. I have been unsuccessful in wintering my bees for the last 2 years. Two years ago this winter I lost 55 colonies; last winter I lost 33. Last fall I built a cellar under my house especially for bees, and I examined them yesterday and found them in good condition. Bees do well here. We have any amount of red raspberry, basswood and white clover, the only trouble being in wintering.

Bees in Good Condition.—John Rey, East Saginaw, Mich., on Feb. 26, 1885, writes thus:

My bees have had good "flights" during the last 3 days, after I dug them out from under the snow. They had been under the snow since Jan. 17. I found 6 dead colonies, and the remaining 50 seemed to be in good condition. I was somewhat alarmed about their being under the snow so long. I never had bees under the snow any longer than 2 weeks at a time, but this time it was about 5 weeks. Of the 6 colonies that were dead, 3 were queenless and the other 3 were smothered, the entrances being completely frozen shut, with about 1 inch of ice on the inside. I notice that all the colonies which have old queens, are wintering the best; they seem to be the quietest, and did not commence to rear brood as early as the young queens; neither do they spot the snow so much as the young colonies.

CLUBBING LIST.

We will supply the *American Bee Journal* one year, and any of the following Books, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both. Club
The Weekly Bee Journal.....	\$2 00..
and Cook's Manual, latest edition	3 25.. 3 00
Bees and Honey (T.G. Newman) cloth	3 00.. 2 75
Bees and Honey (paper covers).....	2 75.. 2 50
Binder for Weekly Bee Journal.....	2 75.. 2 50
Apiary Register for 100 colonies	3 25.. 3 00
Dzierzon's New Bee Book (cloth).....	4 00.. 3 00
Dzierzon's New Book (paper covers)	3 50.. 2 75
Quinby's New Bee-Keeping.	3 50.. 3 25
Langstroth's Standard Work.....	4 00.. 3 75
Root's A B C of Bee Culture (cloth)	3 25.. 3 10
Alley's Queen Rearing.....	3 00.. 2 75
The Weekly Bee Journal one year	
and Gleanings in Bee-Culture (A.L. Root)	3 00.. 2 75
Bee-Keepers' Magazine (A.J. King) ..	3 00.. 2 75
Bee-Keepers' Guide (A.G. Hill).....	2 50.. 2 35
Kansas Bee-Keeper.....	3 00.. 2 75
The Apiculturist, (Silas M. Locke) ..	3 00.. 2 90
The 6 above-named papers.....	6 50.. 6 00

THOMAS G. NEWMAN,

925 West Madison Street, Chicago, Ill.

To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell almost any quantity of it.

CORRESPONDENCE

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark \odot indicates that the apiarist is located near the centre of the State named: δ north of the centre; η south; \ominus east; \circ west; and this δ northeast; \circ northwest; \circ southeast; and η southwest of the centre of the State mentioned.

For the American Bee Journal.

Is Pollen Fed to Larval Bees?

G. M. DOOLITTLE.

On page 60, I notice that Mr. J. Rutherford takes exception to my saying in a former article, that "the intestines of the newly-hatched bee are filled with pollen when it emerges from the cell," and he says: "Now, if I understand things rightly (scientifically), the intestines of the young bee are not filled with pollen, because the young bee in the larval state does not eat pollen; therefore it is impossible for any one to see it with the naked eye. The food of the young bee consists of a purely animal secretion," etc.; after which he adds: "Will Mr. Doolittle kindly reply through the BEE JOURNAL, as all I want is to get at the truth of the matter." As I am always willing to answer all questions put in this kindly manner, I will try to explain my views on this subject as nearly as I can.

From many careful observations regarding the food of larval bees, I have been led to believe that such food was composed of about two parts honey or saccharine matter, four parts pollen, or flour, when used in early spring for a substitute, and one part of water, the whole being taken into the stomach of the bee and formed into chyme, after which it was given to the larval bees in the cream-like form as we see it in the cells.

Right here I wish to digress a little and give some farther observations as bearing on the eating of pollen by the old bees. It will be remembered that about a year ago I described, in the BEE JOURNAL, how I starved some colonies of bees outright, and others partially so, in trying to make them eat pollen in the fall and at other times when there was no brood in the hive, and that, as far as I could see, not a cell of pollen was touched. At another time some of my colonies had to be fed, when I again tried an experiment which I had formerly tried several times, which was to see if the bees in some of those hives that had scarcely a cell of honey in them, but plenty of brood in all stages, would live if provided with pollen. As the weather at this time was so unfavorable that the bees did not fly for several days, I anxiously watched them to see

what they would do as soon as the few cells of honey were gone. The first thing noted was that as soon as all the honey was gone, the larvæ were scrimped of food, and the eggs were removed from the cells or eaten by the bees, (I think the latter, as I have seen bees eat the eggs when dropped by the queen), while during the next day there was a general eating of the larvæ.

The next day after, the sealed drone-brood was taken from the cells and sucked dry, while the harder parts were scattered about the entrance and bottom-board of the hive. At this time I noticed the bees putting their tongues together as they do when young bees take a load of nectar from the field-bees in times of plenty, which thing was continued till nearly all of the pollen was used up in the hive, which lasted for several days, when it came good weather again so new supplies were gathered.

From these observations I have formed the opinions which I have heretofore given, that old bees only partake of pollen in the form of chyme, and that this chyme is only prepared when there is, or has been, brood lately in the hive. Hence, I said breeding in confinement came before pollen, as the cause of our wintering troubles.

But to return: That the larval bee subsists wholly on this creamy food or chyme, I think no one will deny, and if from my observations I am correct, the largest element in this food is pollen. As the larva absorbs this food, the grosser part of the pollen forms itself into the yellow streak seen in all larvæ when taken out of the comb, but most plainly in the drone larvæ; which streak is finally enclosed by the intestines of the newly-hatched bee, and evacuated on its first flight.

Mr. H. D. Miner guesses in a back volume of the BEE JOURNAL, that it takes 2 pounds of honey and pollen ($\frac{1}{2}$ pollen) to produce 1,000 young bees, but I think that he has the amount much too high; but be that as it may, it seems to me that there is no reason for a doubt but what pollen enters largely into the food of the larval bee, and I shall hold that belief until some scientist shall prove that I am wrong.

To show that I am not alone in this belief, I wish to give the testimony of others who incline to a like belief.

Gundelach says: "The larvæ are immediately fed by the workers, with a pellucid jelly, prepared in their chyle-stomachs by the digestion of honey and pollen mixed with water." Will Prof. Cook please note that Doolittle is not the only one who thinks that water is an essential element in this larval food? Neighbour says: "A portion of this pollen is taken at once by the 'nursing bees,' which are supposed to subject it to some change before offering it to the larvæ."

Kirby says: "With this pollen, after it has undergone a conversion into a sort of whitish jelly by being received into the bee's stomach, where it is probably mixed with honey and regurgitated, the young brood immediately upon their exclusion, and until their change into nymphs, are dili-

gently fed by other bees, which anxiously attend upon them, and several times a day afford a fresh supply." Gallup says: "Every bee-keeper ought to know that bees do not feed pollen directly to their young; but it is elaborated in the stomach of the bee, into chyme to feed the young on."

Quinby says: "How this food is prepared is mere conjecture. The supposition is, that it is chiefly composed of pollen; this is strongly indicated by the quantity which accumulates in colonies that lose their queens and rear no brood." Prof. Cook says: "The food is composed of pollen and honey. Certainly of pollen, for, as I have repeatedly proved, without pollen no brood will be reared;" and again, the function of bee-bread is to help furnish the brood with proper food. In fact, brood-rearing would be impossible without it."

A. I. Root says that "it is supposed that this larval food is pollen and honey, partially digested by the 'nursing bees.' Bees of this age, or a little older, supply the royal jelly for the queen-cells, which is the same, I think, as the food given to very small larvæ. Just before the larvæ of the worker bees and drones are sealed up, they are fed on a coarser and less perfectly digested mixture of honey and pollen."

In the above, all agree that pollen enters largely into the food of the larval bee, and I think it must be conclusive to Mr. R. and others, that I was right regarding the matter.

Borodino, \odot N. Y.

For the American Bee Journal.

Wisconsin State Convention.

A goodly number of bee-keepers met in the Agricultural Rooms of the State Capitol at Madison, Wis., on Feb. 6, 1885. G. W. Sanford, of Dane county, was elected temporary chairman, and on motion, J. W. Vance was elected Secretary.

The permanent officers were elected as follows: C. A. Hatch, of Richland county, President; George Grimm, of Jefferson, 1st. Vice-President; R. A. Morgan, of Columbia, 2nd. Vice-President; Frank McNay, of Juneau, Treasurer; and J. W. Vance, of Dane, Secretary.

The Constitution and By-Laws, as contained in the "Bee-Keepers' Handbook" was read, and on filling the blanks, was unanimously adopted, and 22 signed the constitution and paid the fee.

A committee was appointed to prepare a programme for discussion, and after some deliberation they reported the following topics: 1. "The best system of producing comb honey." 2. "Controlling after-swarms." 3. "Races of bees." 4. "Best method of wintering bees." Mr. Joiner began the discussion upon the first topic. He said that comb honey ought to be made a specialty. He commenced with box-hives, afterwards used the frame-hives, and at first, ran his apiary for extracted honey. He considered the use of foundation essential

both for brood-frames and sections. The shape of the hive is not so important as the situation of the flowers accessible to the bees, or the method of management. He keeps about 30 colonies of bees, and has about 300 extra combs. He uses wide frames in the surplus arrangements. From time to time he examines them and removes all filled sections. The short, or as he terms them, "bob-tailed" sections, he leaves and allows the bees in the spring to have access to the hives containing these sections, when the bees clean them out. He prefers the hybrids, believing that a cross always takes care of its honey. Some of the best bees are of the most common stock. Black bees are hard to find now.

Mr. Wilcox has been using the Simplicity hive, but does not use wide frames. Hereafter he intends to use the Heddon-Langstroth hive and will follow the Heddon system of management. He will use sections $1\frac{1}{4}$ inches wide with a strip of foundation nearly the full size of the section, placing it in the middle of the section. Another system is the Walker system, by which the rack is ready to be shipped as soon as taken from the hive. He employs the "tiering up" plan, which is especially of advantage in very warm weather. He prefers the Italians for producing extracted honey.

Frank McNay said that if sections are used without separators, we must use narrow sections, otherwise the bees will build extra combs. After the bees get started in a section, he places another under it, and as soon as a section is filled he removes it.

Question. "How many use the wide frames?" Only two bee-keepers present preferred them.

The next topic, "Controlling after-swarms," was then discussed.

Mr. Frank McNay had long ago discovered that cutting out queen-cells would not prevent swarming, and particularly after-swarming. He hives the swarm, places it upon the old stand, moves the old hive to a new stand and in the evening of the next day he brings the old colony and shakes all the bees into the new hive on the old stand so that all the young queens are destroyed. His first swarm appears about June 8. He thinks that the brown German bees are better than the blacks.

M. A. Gill practices dividing colonies, rears queens as nearly as possible under the swarming impulse, and desires to have all colonies strong at the right time to gather honey.

Mr. Wilcox returns swarms, and whatever bees they have go to work in the sections. He generally prevents after-swarms and gets white honey.

Frank McNay said that much depended upon the location of an apiary; while Mr. Wilcox's location was very good for his own plan, it would not do for the speaker's location, on account of the bees getting too strong.

Mr. Gill had practiced dividing colonies for so long a time that his bees have lost the "knack" of natural swarming. He has not had a natural swarm for 3 years.

Last year Mr. McNay had an increase of only 7 colonies in an apiary of 45.

Mr. Hatch explained the Heddon method of controlling after-swarms, and thought that it was very essential to keep good queens.

The next topic discussed was "The races of bees."

Mr. Gill said that he had had experience with 4 races of bees, but he preferred the hybrid as a bee for business, and said that a dark cross gives the bees vigor. As a rule he had found that the best hybrids are bred from pure mothers; if produced by Italian mothers, crossed with the brown bee, they will better protect their stores from robbers. The light-colored bees he had found to be lazy, but the dark, leather-colored bees had proven the best.

The next and last topic discussed was "The best method of wintering bees."

President Hatch said that it is a one-sided question. He had tried, without satisfactory success, the out-door plan and was now of the opinion that a deep, dry and well ventilated cellar is the best place in which to winter bees, not only because it is safer, but because it requires less honey. He thinks that each colony ought to have 20 pounds of good, thick honey; thickness of honey being an important quality. He does not look after the queens, as he considers it unimportant, and as they are troublesome to find. He thinks that it is a good idea to spread the brood-frames. He keeps the temperature of his cellar at about 45° above zero, and considers that the right temperature.

Mr. Gill spoke of an instance where a bee-keeper wintered his bees in the cellar under his kitchen, and the bees were so warm that they swarmed in February.

Mr. McNay gives plenty of ventilation at the bottoms of the hives by putting them on strips, thus giving a free circulation of air below. He considers this lower ventilation very essential to successful wintering.

The President thought that he must have the bottom-boards on the hives. Mr. Gill at first packed his hives in corn-fodder and lost all his bees but 6 colonies. Mr. Joiner has a pit dug in the hill-side, built around with saplings and covered with a double door. At one end of it there is a ventilating flue. He puts the hives in as soon as cold weather begins and leaves them until April, or when the maples are in bloom. He loses no colonies with this method of wintering.

Dr. Vance described his double-walled hive, in the construction of which he uses 3 thicknesses of building paper, instead of chaff. He could not say as yet that it is a success, because half of his bees died last winter, the most of the colonies evidently having died from starvation. Thus far this winter his bees are alive.

Mr. Gill stated that if the Doctor had put his hives in the cellar after his elaborate preparation, no doubt they would have wintered successfully. In the cellar the bees require much less honey. One winter his

bees were in confinement for 108 days and consumed but 4 pounds of honey per colony. He thinks that 12 pounds of honey is enough and that combs of honey are the best feeders. On another occasion he wintered 145 colonies on 15 pounds of sugar syrup per colony.

Mr. McNay has a ventilating pipe from the cellar connecting with the pipe of the stove in the room above, and has had better success since using this arrangement.

Mr. Joiner thought that it will take about as much honey as if wintering out-doors.

Mr. McNay said that bees do not breed much until spring.

Mr. Elvers thinks that there are some advantages in out-door wintering, as the bees have brood earlier.

Mr. Gill thought that there was no advantage in having brood early. It was just as useless as it would be for a farmer to employ hands and board them for several weeks before the time of harvest.

Mr. Elvers said that he sometimes did that with advantage. In putting out the bees in the spring there is more or less dwindling, which is not so likely to occur in out-door wintering. Bees will materially diminish in a week after they are put out.

A table was made out in which 21 members represented 892 colonies, spring count; 1440 put into winter quarters; and 18,630 lbs. of comb honey and 47,770 lbs. of extracted honey produced during the season of 1884. Eight members use the Simplicity hive; 5, the Langstroth; 4, Kidder; 3, American; and 14 winter their bees in cellars; 1, in a bee-house; 1, in a pit; and 4, in chaff or double-walled hives.

The Secretary of the State Agricultural Society expressed his gratification at the success of the bee-department of the Society, assured its members of his interest in their behalf, and promised his cordial co-operation in helping forward the Wisconsin Bee-Keepers' Association. Adjourned until Feb. 1886.

J. W. VANCE, Sec.

C. A. HATCH, Pres.

For the American Bee Journal.

Wintering Bees in Chaff-Boxes.

W. H. SHIRLEY.

All things considered, I believe that, for wintering bees, chaff hives stand at the head yet, and the closer the chaff is to the bees the better. In the fall of 1882, I constructed 150 wintering boxes, on the chaff-hive principle. Into these boxes I put the bees and their combs from their summer hives, and they wintered without any bee-diarrrhea.

In the fall of 1883, after filling the 150 boxes, I had 17 colonies left which I put up in clamps with sawdust packing; 13 of the 17 died with bee-diarrrhea, while not one of the 150 in the boxes showed any signs of it. Having sold all my interest here to Mr. Heddon, it will be for him to report how they winter in the boxes this winter—

one of the most severe winters for bees that I have ever known.

I never saw any dampness among the bees in these wintering boxes, but sometimes the chaff cushions which are used on top of the frames would be very wet on the upper sides. If all that dampness had been confined among the combs, I am sure that there would have been only empty combs left in the spring, where, as it was, there were live bees.

Chaff hives are too large and cumbersome to handle bees in in the summer; it is too expensive to keep both winter and summer hives, and the shifting from one to the other in the spring and in the fall is vexatious work. Next spring I intend to start anew in the bee-business, and I shall use a common-sense bee-hive of my own construction—one which admits of chaff cushions being placed all around the bees easily and quickly, and it also admits of the use of any number of frames, from 1 to 10, without division-boards or "dummies," and the frames are reversible without any complicated devices, being reversed by simply turning them over and putting them back. No honey-board is needed when using the surplus arrangements, for what I deem correct bee-spaces are kept by the construction of the surplus arrangements and the hive, viz: 3-16 of an inch, whenever bee-spaces are needed.

Glenwood, 2 Mich.

For the American Bee Journal.

Pollen and Newly Hatched Bees.

M. MAHIN, D. D.

With the discussion of the pollen theory, so far as it is a controversy between Mr. Doolittle and Mr. Heddon, I do not wish to take any part; and perhaps if I were to express my views fully, I might not agree with either of them in all things. But there are statements in Mr. Doolittle's article on page 5, to which I wish to take exception. He says: "The first fact to which I wish to call the reader's attention is, that the intestines of the newly-hatched bee are filled with pollen when it emerges from the cell; in fact, this pollen is easily seen with the naked eye, in the larva, before it is sealed over in the cell." Mr. Doolittle is certainly mistaken in his supposed facts. The evidence is very clear to me, and I think that it will be to any one who will investigate the matter, that the nurse bees do not feed undigested pollen to the larvæ in even the smallest quantities. The food which they furnish is easily examined in the creamy-looking substance that is supplied to worker-larvæ, and in what is called queen-jelly, which I hold to be identical with the food of worker-brood, except in quantity, and in consistency, which latter is due entirely to evaporation. No pollen grains are ever found in this food.

But what of the statement that pollen may be seen in the unsealed larva? That is a case of mistaken identity. Mr. Doolittle has mistaken the brownish-colored, gummy substance which

is converted into the cocoon that the larva always spins, for pollen. This substance is much more abundant in young queens than in young workers, and I have often had occasion to notice it when destroying immature queen-cells.

It is also a mistake to say that the intestines of the young bee are filled with pollen when it emerges from the cell. They are not filled with anything. The abdomen is quite small. I have never seen an exception, and I presume Mr. Doolittle has not. I have never dissected a bee just out of the cell, to see whether there was any pollen in its intestines, but I feel very sure that a microscope could not reveal a particle of it. When young bees emerge from the cells, they are quite small. They look as if they were almost starved, and doubtless they are; for the first thing they do is to hunt for something to eat. And now is the time when they get full of pollen. The newly hatched bee has an appetite for that substance, and will eat it if it can be found. I suppose that it is necessary to build up its immature system; for there is always an increase in size after it comes out of the cell.

With the general conclusions of Mr. D.'s article, I have no controversy, and yet there is one other point on which I wish to express dissent. He says: "I can see no other 'prime cause' for this state of affairs, but confinement; for where bees can fly every two or three days, no such thing can exist." Now, I have all the evidence that such a case admits of, that bees may have diarrhea and die when they can fly every day. Last spring, during the last week in April and the first in May, when the weather was warm, and my bees were gathering honey and pollen freely, most of the colonies were affected with this troublesome disease. They had all come through the winter in prime condition, and were healthy in the early spring; and it seemed strange that they should be diseased at that time. The grass in and about the apiary was full of dead and dying bees. Hundreds, not to say thousands, of young bees that had never been on the wing, would come out so distended with fecal matter, that they could not fly, and they would crawl away in the grass and die. Others would foul the alighting-board, or the front of the hive, and, probably, recover. I had seen a few bees affected in that way in former years, but never to the same extent. When the apple trees came into bloom, the disease disappeared. I did not lose any whole colonies, but several were sensibly weakened by the disease. In this case confinement had nothing to do with producing it; but, of course, a few days of confinement would have produced wholesale destruction. The cause of the disease must have been in the honey, or in the pollen, or both. The bees were working at the time on the flowers of willows, hard maples and plum-trees, the larger part of the forage coming from willows.

As a rule, bees will not have the diarrhea when they can fly every few

days, but the rule is not without exceptions. And I know from extensive observation that if bees have much brood when cold weather sets in, and the cold is of long continuance, they are sure to perish with disease. I have proved that to my cost.

New Castle, O., Ind.

For the American Bee Journal.

Experience in Keeping Bees.

A. C. FASSETT.

I obtained my first 2 colonies of bees in the spring of 1880, in the Clarke, straw-lined hive. During that season I divided them into 5 colonies and secured a little honey. During the next winter I left them on the summer stands, and the next spring there was not a live bee left. I think that they froze to death. I had already made up my mind to keep some bees anyway, so I bought 2 new colonies; I had no loss during the next winter, and in the spring of 1882 I again made 5 colonies from the 2, obtained about 150 lbs. of honey, and wintered them with no loss during the next winter. In the spring of 1883, Mr. T. F. Bingham gave me a copy of the BEE JOURNAL, and I read something about comb foundation and the benefits to be derived from its use. So I procured a smoker and some foundation, and sent for the BEE JOURNAL and Cook's Manual. During the season of 1883 I increased my 5 colonies to 19 and got about 250 lbs. of comb honey. In the fall I put 9 colonies in the cellar and packed 10 outside. I lost 2 in wintering—one starved outdoors and the mice destroyed one in the cellar; 14 came through in good condition, and 3 were weak, so that it took all summer to build them up.

Last season I discarded my old hive for a new kind, used foundation starters in the brood-frames and sections, and took over 1,000 pounds of comb honey, nearly all of it being in one-pound sections. At present, I have 55 colonies in winter quarters, and sold 3. The increase was made by natural swarming. All seem to be in good condition at present. I fed about 175 lbs. of granulated sugar. I would feed all that was required, at one time in the fall, in a dripping pan put under the frames, with a perforated wooden float over the syrup. I have 15 colonies packed outside, and 40 in the cellar. My cellar has a pipe connected with the pipe of the stove in the room above. It seems to be a good ventilator. I keep my bees in a yard about 60 feet square with a tight board fence around it 7 feet high. My bees are nearly all Italians. I expect to have them all Italianized next season.

My hive is something like Mr. Doolittle's—simply a box 10½ inches high and 14½x18 inches, inside measure, and holding 10 frames with ¾-inch space at the bottom and top of the frames, under the section-rack. It has a ¾-inch rabbet cut at the top and bottom, so that I can tier them up if I wish to do so. The hive has a ¾-inch groove cut out on the inside

of the end-boards, 2 inches from each side of the hive, for division-boards for wintering. The entrance is a V-shaped opening cut in the bottom-board, and is opened and closed by sliding the hive forward and backward.

Watson, 9 Mich., Feb. 9, 1885.

For the American Bee Journal.

Northeastern Michigan Convention.

The Northeastern Michigan Beekeepers' Association held its third annual convention on Feb. 4, 1885, at Vassar, Mich.

DIFFERENT VARIETIES OF BEES.

C. E. Rulison: The Cyprians and Syrians are good honey-gatherers, but too irritable. The Syrians are inclined to swarm, but this I have controlled by spreading the brood and giving plenty of surplus room. I object to the Syrians, because they fill the cells so full of honey and cap it so thinly as to give the honey a watery appearance. For the production of extracted honey I prefer Italians, but if nice, white, straight comb is wanted in sections, then have black bees or a cross between them and the Italians.

M. D. York: For the production of comb honey I prefer a cross between the Italians and blacks; if compelled to use a pure race for this purpose, I should choose the blacks. For extracted honey, I prefer Italians.

C. E. Rulison and the Secretary agreed with Mr. York.

WINTERING BEES.

C. E. Rulison: I have removed the honey and pollen, late in the season, by taking away the combs of honey, and substituting dry, empty combs, and then furnishing the bees with food by laying soft candy over the combs and covering it up so the bees could cluster upon it. The bees wintered well with no other food. Cut loaf-sugar used in place of the soft candy was a failure. I believe that sugar syrup is the best winter food, but some attention must be paid to ventilation.

Byron Walker: I had bees die with diarrhea in hives whose ventilation was so good that the chaff covering was perfectly dry; and I have bought bees in another locality, and the hives were so little ventilated that the chaff covering was wet and decayed. I think that the cause of bee-diarrhea is in the food. My losses are greatest when the bees have late-greatest stores.

C. E. Rulison: I think that the wintering question turns upon food and ventilation. A colony never perishes unless the inside of the hive, the combs and bees become damp.

R. L. Taylor: I look upon dampness as a symptom rather than a cause of disease.

W. Z. Hutchinson: If ventilation is so important, I cannot understand how the bees wintered so well when Prof. Cook poured water over the hives and allowed it to freeze; or when buried in the earth, or in a tight-plastered cellar where there was so

little ventilation that the combs were blue with mold.

M. D. York: I do not think that snow ever closes the hive sufficiently tight to smother bees. The warm air issuing from the entrance often melts the snow around it, thus forming a miniature cave in the snow in front of the hive.

N. Van Patten: Is it not pollen that causes bee-diarrhea?

R. L. Taylor: At the Michigan State convention, Dr. A. B. Mason said that he had experimented until he knew that pollen was the cause of bee-diarrhea.

Byron Walker: I do not believe in the pollen theory; my losses are caused by fall honey, and not by pollen.

R. L. Taylor: Bee-diarrhea is caused by the consumption of such food as leaves a large amount of residue after digestion, and it matters not whether the pollen is eaten in "solid chunks" or is floating in the honey.

QUEEN-EXCLUDING HONEY-BOARDS.

C. E. Rulison: I have used wooden queen-excluding honey-boards, similar to those used by Mr. Hutchinson, and when placed over an old established colony, the bees were slow in beginning work above in the sections, and I was obliged to remove the honey-boards. When placed at the sides of the brood-nest, the bees passed through quite readily, as they also did when placed over a brood-nest when working for extracted honey.

W. Z. Hutchinson: In a colony in which the brood-nest is established, I have no use for a queen-excluding honey-board when producing comb honey; but when working for extracted honey, or when honey-boxes are placed over a newly hived swarm having no combs in the brood-nest, I want a queen-excluding honey-board.

Byron Walker exhibited and explained his combined case and shipping crate; he thought that the slats in the bottom upon which the sections rest, answered the purpose of a honey-board.

R. L. Taylor: My objection to this arrangement would be that the brace-combs attached to the bottom-bars of the first case would come in contact with the tops of the sections in the second case added in "tiering up."

M. D. York: Another objection to sending honey to market in this case in which it is stored, is that it cannot be graded nor cleaned.

Byron Walker: I have not been troubled much with brace-combs in my apiary, and, with a scraper I can easily scrape off all pieces of comb and propolis.

REVERSIBLE FRAMES.

Byron Walker: I have for 10 years used the hanging frames and the closed end frames. I prefer the latter, and they can easily be made reversible. My experience with reversible frames has been limited but favorable.

C. E. Rulison: I have used them quite extensively for 2 years, and am decidedly in favor of them.

ALSIKE CLOVER.

In the spring of 1883, Mr. M. D. York sowed 12 lbs. of alsike clover seed on 3 acres of land that had been sowed to winter wheat in the preceding autumn; two-thirds of the ground was a low, sandy loam, but underdrained; the remainder, a heavy clay. In the fall the upland was well fertilized. Knowing that if once the seed-stalks were allowed to form, no more would be formed if those were removed, and wishing to retard the bloom until after basswood, on May 1, 1884, he turned 5 cows and 3 hogs into the clover; on May 24, 2 horses were turned into the field; on June 10, 40 sheep were added, and on June 15 all of the stock was taken from the field. On July 8 the clover was about 4 inches high when it commenced to bloom; on July 15, at a distance of 40 rods, it looked like a field of snow, and the aroma could be easily detected that distance. Bees began to work on it with the first blossoms, and continued until about Aug. 1, and during 2 weeks of the time the field was roaring with bees, twenty colonies stored 400 lbs. of surplus comb honey, in sections, from the alsike. By the last of Aug. the alsike was about 1 foot high, and was cut for seed. In curing it was treated similar to hay. It yielded seed at the rate of 3 bushels per acre. When the stock was turned out of the alsike they were turned into a field of red clover, and in 3 days the 5 cows had "shrunk their milk" 9 quarts to the milking. Again in Oct. there was quite a growth of leaves upon the ground, and the cows were turned in, when he was agreeably surprised to see, within a week, a gain of milk at the rate of 10 quarts to the milking.

W. Z. Hutchinson: I cut 10 acres of alsike just as it was coming into bloom, and it did not start again, but the weather was very dry.

C. E. Rulison: I once visited a beekeeper and my horses were given their choice between alsike chaff and good timothy hay, and they chose the former.

M. D. York: My stock prefer the chaff to other fodder.

G. A. French: I had $\frac{1}{2}$ acre of alsike, in which some calves were allowed to run, and I cut some of it each day to feed the horses, and it continued to blossom, even where cut, until about July 1.

M. D. York: All of the seed-stalks are not of the same age, and if the first ones are cut off before the younger ones are up large enough to be cut off, the latter will, of course, make a good growth.

CLIPPING THE QUEEN'S WING.

C. E. Rulison: I am opposed to the practice. I lose queens by their getting into the grass. With a fountain pump there is little danger of losing bees.

M. D. York: I had rather lose a queen occasionally, than to lose bees and queen too.

C. E. Rulison: I am not so sure of that. When bees are thwarted in their swarming impulse, they become sulky and store but little honey, and

often the honey harvest is past before they get things in shape to suit them, and they usually "get things in shape" by absconding with a virgin queen when no one is by to see them.

Wm. E. Harris: Near my apiary are tall trees, and it is difficult to get swarms down out of them. I have tried clipping the under wing of a queen, and found that she could fly when thus clipped.

C. E. Rulison: With proper appliances, I can take down swarms that are clustered 30 feet high. I can stop a swarm from issuing by throwing a wet sheet over the hive.

W. Z. Hutchinson: We have had more trouble with swarms having queens whose wings were clipped, than with those having queens with unclipped wings. A swarm without a queen wanders about a long time before returning, and when it does come back it sometimes enters the wrong hive or hives; or if it strikes the right hive, it sometimes clusters all over the outside of it, and only goes in after a long time. When a queen is given to a returning swarm, she sometimes comes out again, and the bees follow suit. If one is going to practice clipping, clip all of the laying queens; clipping part of them greatly complicates matters.

R. L. Taylor: I cage the queen and lay her in the shade until the bees return, enter the hive, and begin to show signs of uneasiness when she is given to them, and gives no trouble by coming out again. If a swarm attempts to enter the wrong hive, I throw a sheet over the hive.

M. D. York: Could not the queen be caged, and the bees be induced to cluster around her by elevating her upon a pole among the bees?

W. Z. Hutchinson: We have tried it, and the plan is not always a success.

APIARIAN EXHIBIT AT NEW ORLEANS.

R. L. Taylor, who had visited New Orleans, gave a brief description of the apiarian exhibits at the exposition. They number five: California, Wisconsin, Ohio, Iowa, and that of the general government.

California's exhibit was in the form of a pyramid 8x8 feet square at the base, and 10 feet high. It was on a table, and consisted of comb and extracted honey, fine beeswax and a colony of bees in an observatory hive. The extracted honey was shown in large glass vessels; the comb was in sections, and in large frames so arranged as to be easily divided.

The Wisconsin exhibit was arranged upon a table in a similar manner to the California exhibit, but the pyramid was not more than 4 feet high. The honey was mostly in one-pound sections. The whole exhibit was covered with glass.

The Ohio exhibit was about 8x8 feet square, six feet high, and consisted of both comb and extracted honey, and was surmounted by a wax figure. Implements were also shown. The State had also induced Dr. Besse to bring down 100 colonies of bees. The Doctor brought them with a view to see if it would pay to take bees South to

winter. Excepting 10 colonies, the combs of which had been placed crosswise instead of parallel with the car, all came in good condition. The 10 colonies whose combs were crosswise of the car were dead.

The exhibit from Iowa was sent by O. Clute, and was not entirely arranged, but gave promise of being fine. It consisted largely of extracted honey, but there was a glass case filled with sections that were tastefully arranged.

The exhibit of the general government was large and varied, but the persons having it in charge did not understand making and caring for an apiarian exhibition. The comb honey had been removed from the shipping crates and exposed with no covering of glass, and had been considerably punched and fingered. Hives and implements were so shut up and covered up that it was impossible to examine them.

STIMULATIVE FEEDING.

R. L. Taylor had tried "feeding up" bees in the spring, and the result was that he "fed them down."

M. D. York: I have fed a thin sugar syrup after apple bloom, and it was a benefit.

KEROSENE OIL AND ROBBERS.

N. Van Patten had stopped a terrible robbing raid by driving out the robbers with smoke, closing the hives and then wetting them and their surroundings with kerosene oil. When quiet was restored, the entrances were slightly opened. The bees belonging to each hive clustered under the bottom-boards of their hives, and were brushed off and put into the hives.

The election of officers resulted as follows: President, R. L. Taylor; Vice-President, John Rey; Secretary, W. Z. Hutchinson; Treasurer, Byron Walker. The Convention adjourned to meet on the first Wednesday in Feb., 1886, at East Saginaw, Mich.

W. Z. HUTCHINSON, Sec.

R. L. TAYLOR, Pres.

For the American Bee Journal.

The Origin of Honey-Dew.

W. C. R. KEMP.

Some months ago I wrote an article for the BEE JOURNAL on "Honey-Dew—what is it?" and in that article I attempted to show what honey-dew is, and whence produced. This called forth a half dozen or more articles from as many different correspondents, and but one or two—notably, Chas. Dadant, of Illinois—agreeing with my theory; and in a recent number of the BEE JOURNAL, Mr. J. M. Hicks comes to my assistance. I now desire to more fully state my position on this subject.

The preponderance of testimony from those who have written concerning this subject, favors the production of this substance by bark and plant lice. No one questions the fact that trees and plants are infested, to a greater or less degree, by these insects, and nature has supplied them with necessary subsistence, and this

substance, which is termed honey-dew, must have a producing agent, or a source from which it comes.

Prof. Cook, before some bee-keepers' convention, made the remark that it was "all foolishness to say that honey-dew rained down." That may be; but, is it not more foolish to say that aphidæ produce it, or secrete it in some mysterious manner?

That plant-lice live and thrive and multiply on it we all concede, and none deny. Let me ask, where does the saccharine properties of the juices of the sugar-tree, sugar-cane, the nectar in the flowers, and the sweets contained in the various fruits, berries and vegetables, come from? Will Prof. Cook answer? Will the host of other bark-louse theorists answer? There are but 3 sources from which it can be derived, namely, earth, air and water. The component parts of these three elements combined, enter into the structure of every tree, plant and shrub in the world.

Take a shovelful of earth, or soil, from the richest part of your garden; burn it, digest it, analyze it, and not a particle of sugar will be found. Take a barrel of rain or spring water, boil it until it all evaporates, and then how much saccharine matter have you left? Then it is clear, that from neither of these two elements is nectar formed. Then we have but one left, namely, the atmosphere; and I shall not attempt to solve the problem as to how honey-dew is derived from the atmosphere, for nature has never yet unfolded the mysterious workings of her wonderful machinery to the knowledge of man. We know that grass grows and flowers bloom, but how they do this, we do not know.

It is known, to botanists at least, that the leaves of trees are the lungs through which they breathe. "Respiration in plants is analogous to respiration, or breathing, in animals. In both it is equally constant, and equally necessary, and in plants, it is performed principally by the leaves." "Respiration consists of the absorption of oxygen from the atmosphere, accompanied by the solution of carbonic acid." I take it, then, that the exhalation or saccharine properties of the abundance of bloom of all kinds, fills the atmosphere, and under certain influences and conditions, which we know not of, condenses and settles on trees, leaves and plants, and is absorbed by the leaves of trees which secrete sweet sap, and furnishes food for insects, etc. The conditions of the atmosphere required to convert these properties into sugar, may exist in the greenhouse as well as elsewhere, and accounts for its appearance there—if it does so appear.

Mr. Cogswell says, on page 567 of the BEE JOURNAL for 1884, that "the vapor which rises from the honey-cavity of flowers, or from uncapped combs in process of 'ripening,' is probably only a surplus of water with no sensible trace of sweetness about it." Did Mr. C. ever visit a sugar-camp when the sap of the sugar-tree was being boiled, and not smell it? Did he never smell the aroma from the coffee-pot on the stove, or the cab-

bage in the dinner-pot? Did he never inhale the fragrance of a full-blown rose? If not, his olfactories must be wonderfully deficient. That flowers and evaporating sweets do emit an odor, everybody knows. It is a law of nature that nothing is lost or destroyed. The steam from the engine, the vapor from the water, the smoke from the chimney, are lost to sight, but not destroyed. So it is with the aroma of flowers—only transformed into something else, and fitted to perform its part in the workings of Nature that it was intended it should do by the Creator.

Mr. Samsel, on page 616 of the BEE JOURNAL for 1884, inadvertently contradicts himself, after affirming that he has positive proof that *aphidæ* do produce honey-dew, and cites a case from "Langstroth on the Honey-Bee," where somebody distinctly saw the *aphidæ* ejecting the fluid from their bodies. Of course; how could it have been ejected unless first taken into their bodies? Then, he says: "While we deny that honey-dew is formed by saccharine condensation, we do not pretend that it is produced by insects exclusively, but believe it possible that it may exude from the leaves of some plants and trees under favorable circumstances." I return thanks to Mr. S., after asking him to explain how it got into the "leaves of some plants and trees."

I may be permitted to state that after a more critical investigation into the nature and source of this substance called honey-dew, during the coming summer, I find that my theory is not fully substantiated by the facts and proofs, I will agree to take "bug juice" honey along with my white clover honey, biscuit and butter, and wash it down with milk from my Jersey cow.

Orleans, 9 Ind.

Local Convention Directory.

1885.

Time and place of Meeting.

- Mar. 3.—Southern Wisconsin, at Janesville, Wis.
J. T. Pomeroy, Sec., Edgerton, Wis.
- Mar. 11.—New Jersey and Eastern, at N. Y. City.
W. B. Treadwell, Sec., 16 Thomas St., New York.
- April 3.—N. E. Kansas, at Hiawatha, Kans.
L. C. Clark, Sec., Granada, Kans.
- Apr. 9, 10.—Western, at St. Joseph, Mo.
C. M. Crandall, Sec., Independence, Mo.
- Apr. 11.—Wabash County, at Wabash, Ind.
Henry Cripe, Sec., N. Manchester, Ind.
- Apr. 25.—Union, at Earlham, Iowa.
M. E. Darby, Sec., Dexter, Iowa.
- Apr. 28.—Des Moines County, at Burlington, Iowa.
Jno. Nau, Sec., Middleton, Iowa.
- May 4.—Linwood, Wis., at Rock Elm Centre, Wis.
B. Thomson, Sec., Waverly, Wis.
- May 7.—Progressive, at Bushnell, Ills.
J. G. Norton, Sec., Macomb, Ills.
- May 28.—N. Mich. Picnic, near McBride, Mich.
F. A. Palmer, Sec., McBride, Mich.
- June 19.—Willamette Valley, at La Fayette, Oreg.
E. J. Hadley, Sec.
- Dec. 8-10.—Michigan State, at Detroit, Mich.
H. D. Cutting, Sec., Clinton, Mich.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.



WITH REPLIES by Prominent Apirists.

Storing Comb Honey.

Query, No. 26.—How and where should comb honey be stored during the winter? Is it necessary that the temperature in the room in which it is kept, never goes below the freezing point? Can it be shipped safely in cold weather? My extracting combs have cracked badly. Is it necessary to keep them in a warm room, to prevent their cracking?—Nashotah, Wis.

W. Z. HUTCHINSON answers thus: "It should be stored in a dry, warm place. It is better if the temperature does not go below freezing. The liability to injury is greater if shipped in cold weather; but if the sections are small, well-filled and well-packed, they will usually bear shipment. It is not always necessary to keep honey in a warm room to prevent its cracking."

J. E. POND, JR., says: "Comb honey should be stored in a dry, warm room, not necessarily very warm, but certainly very dry. I find no trouble from its cracking where the temperature is kept above the freezing point. It can be safely shipped in cold weather, if extreme care is taken in packing it so that it cannot be jarred. The combs which are cracked badly I should put in a warm room, and allow them to remain until they could be repaired by the bees."

MESSRS. DADANT & SON answer thus: "Your extracting combs won't crack if they are not handled in cold weather, or if any crack, it will be so slight that the bees will repair them promptly. It is the handling that breaks them, not the cold."

G. M. DOOLITTLE replies as follows: "All honey in the comb should be stored in a warm room if it is to be sold. If not, the cracking of the comb by freezing does no material damage, for the bees will fix it up during the next season, so it cannot be told where the cracks were."

H. R. BOARDMAN remarks thus: "It is necessary to keep comb honey in a warm room, not only to keep the combs from cracking, but also to prevent the honey from granulating."

PROF. A. J. COOK answers thus: "A warm room is best, but we have stored many combs (we always extract the honey in the fall), in a cold room for years, and have had no trouble. They should be handled very carefully, if at all, in cold weather. Winter is a bad time to ship comb honey."

DR. C. C. MILLER replies as follows: "Store comb honey in a dry room, safe from freezing, taking special care that no air comes from a warmer room into the one where the honey is kept. It can be shipped a short distance in winter, if kept very warm for 24 or 48 hours before shipping. Extracting combs can be kept in the cellar if not mouldy or 'mousy.'"

JAMES HEDDON says: "Comb honey gathered in many locations will candy solid in the comb if exposed to a low temperature. Keep your comb honey in a warm place and it will not candy, nor will the combs crack. The same is true of the cracking of empty combs. Comb honey may be kept in a dry basement-room or cellar during cold weather. Look out for dampness when the outside temperature rises above that of the cellar."

Which way should Bee-Hives Front?

Query, No. 27.—All things being considered, which way should hives front, in order to obtain the most profit from the bees, east, north or south, where they are wintered on the summer stands? and which way when they are wintered in the cellar?—East Liverpool, O.

DR. G. L. TINKER says: "South, southeast or east. It could make no difference in a winter repository."

W. Z. HUTCHINSON answers thus: "I have fronted bee-hives in every direction without discovering that it made any material difference which way they were fronted."

J. E. POND, JR., replies thus: "Speaking for my own locality, I prefer to have hives front as nearly south as possible, and easterly rather than westerly."

G. M. DOOLITTLE replies as follows: "I prefer to have my hives front toward the south, no matter where wintered. I shall try a few again next season fronting north."

PROF. A. J. COOK answers as follows: "On the summer stands I would always have hives front east. In the cellar it makes no difference."

MESSRS. DADANT & SON say: "By all means front your hives south, southeast or southwest. Some will tell you to front them north, but these people have never tried it on a large scale, or else they have never tried both ways comparatively in the same location. We have tried it once willingly and twice by hazard, to our greatest sorrow, and this on not less than 20 hives at a time. North exposure is not so bad when used for summer only, as for wintering; but if you have to take your bees out of the cellar early, when they need all the sun, you will soon decide in favor of southern exposure. Due east or west will do better than north, but not so well as south."

JAMES HEDDON replies thus: "East, in summer, and change to the south in winter, if left on the summer stands. I will have something to say regarding the 'why' of it, before the year passes."

G. W. DEMAREE answers thus: "For 6 years I have had two tenement hives containing 4 colonies each, in my apiary. The 4 entrances to each of these tenement hives, fairly represent 4 hives fronting north, east, south, and west; in the long run, I have seen no difference as to the yield of surplus honey from the 8 colonies."

DR. C. C. MILLER says: "I winter my bees in the cellar, and I have the hives, when out-doors, facing east. If it is more convenient, they may face south."

What Caused the Trouble?

Query, No. 28.—In 1883 I lost one colony of bees which died from starvation, with plenty of honey in the hive. It was simply an average one with an abundance of good clover honey at the time it was placed into winter quarters, and at the time of its death, Jan. 25, 1883, the bees and combs were very carefully examined in order to ascertain the cause. The hive and frames were in a most disagreeable condition, being covered with diarrhetic excreta. Drone brood was found in three frames, the centre one containing about five square inches of it. There was not one cell of worker brood in the hive, and not a queen to be found. I do not think that the absent queen had any thing to do with the cause of the so-called diarrhea. What caused the death of this one colony?—Manchester, Mich.

PROF. A. J. COOK says that "this is the common winter trouble. See answer to No. 24."

JAMES HEDDON answers thus: "It died of bee-diarrhea, and not starvation. What causes the disease, is still in dispute; no one knows positively."

J. E. POND, JR., replies as follows: "The answer to this question, like that to No. 24, would be extremely valuable if it could be given with positiveness. Diarrhea undoubtedly was the trouble; but what caused the diarrhea? Echo answers, 'what?' Tell us what, and we shall be able to winter our bees with a fair show of success."

G. M. DOOLITTLE answers as follows: "Brood-rearing resulting in pollen, in the form of chyme, being eaten by the bees which gave them the diarrhea."

W. Z. HUTCHINSON says that "colonies with fertile workers are more inclined to breed out of season than those with a queen."

DR. C. C. MILLER remarks thus: "Perhaps, after all, the absence of a good queen had something to do with the uneasiness and disease. According to Heddon, its death was caused by pollen; according to Clarke, by non-hibernation; or perhaps it was diarrhea."

DR. G. L. TINKER answers thus: "I think that early, winter brood-rearing was the cause of the trouble."

Fastening Foundation in Frames.

Query, No. 29.—What is the best way of fastening foundation in frames? Also, what is the best method of wiring them?—Marion, Iowa.

JAMES HEDDON replies as follows: "I work it thus: After the frames are made up (being previously bored), I sew the wire in the frames. First, slip an end-bar loosely into the center of the frame, to prevent bowing or springing the top and bottom bars, while wiring. Commence near the middle of the frame, and sew both ways, to prevent so much drawing of

wire; when it is done, the end-bar is removed and each end is wound around the head of the nail (purposefully left out a little) that nails the bottom-bar fast, when it is driven to its place. To fasten the foundation to the frame and wires, I bend the sheet up about 3-16, and rub this 3-16 fast to the top-bar by placing a form behind it and rubbing it with a wooden tool, similar to a shoemaker's 'shoulder-stick,' only with a bevelled shoulder to keep the hand from getting in contact with the sheet of foundation. This method mashes the wax fast to the wood very quickly. Mr. W. H. Shirley first used this plan. I then imbed the wires into the sheet of foundation by the use of a wire-imbedder, the frame laying over a form such as has heretofore been described."

DR. C. C. MILLER answers thus: "Probably no way of fastening foundation in frames is nearly so good as wiring. I have had good success in wiring frames by driving through the top and bottom-bars, wire nails of such length as to project through $\frac{3}{4}$ of an inch, then with a pair of round-nosed pliers, bending the nails into the form of a hook, and stringing the wire upon these hooks."

J. E. POND, JR., remarks as follows: "I find the best way of fastening foundation in frames without wires, is to cut it about $\frac{3}{4}$ of an inch shorter, and $\frac{1}{4}$ of an inch narrower, than the length and width of the frame; then take a piece of very thin deal the length of the frame inside and $\frac{1}{4}$ of an inch wide, and after laying the foundation on the top-bar, tack the deal through it firmly so that the foundation will hang directly in the center. However, I would advise the use of wires in all cases. My plan of wiring, whether best or not, is to pierce the top and bottom-bars about $\frac{3}{4}$ of an inch from their ends, and then about 2 inches apart the rest of the distance, pass the wire through backward and forward, draw it tight and fasten it at the bottom."

MESSRS. DADANT & SON reply thus: "To fasten foundation in brood frames, we use a knife and rub the foundation with it until it makes a body with the wood. We use a lath to guide the knife. This manner is very expeditious, and when the operator is an expert, it does better work than any other way that we know of. For wiring, we are strongly opposed to using as many wires as some do. In a Langstroth frame we use two or three wires horizontally, and these are more to keep the foundation from warping than to keep it from breaking. To imbed the wire into the foundation, we have never seen a better instrument than Vandervort's. It is made like the Carlin foundation cutter, only it has teeth set like a saw and runs over the wire. Ruland's wiring tool is also good for the purpose."

PROF. A. J. COOK answers thus: "By wiring the frames; the method of wiring them is explained in all the late works on bee-culture."

W. Z. HUTCHINSON replies as follows: "Have the edge of the foundation warm, and press it upon the comb-guide in about the same manner as foundation is fastened into sections with the Parker fastener. A putty knife can be used, or a large machine can be constructed upon about the same principle as the Parker fastener. To wire frames, have the top and bottom bars pierced; commence in the middle of the frame, and work towards the ends, having the ends of the wire come at the ends of the frame."

DR. G. L. TINKER says: "My method has been, where the top-bar is flat beneath, to use melted wax with a short camel's-hair brush and apply the wax to both sides. If the top-bar is V-shaped or has a supporting thin strip, I prefer to use a heated knife."

What Ails the Bees?

Query, No. 30.—What is the trouble with my bees? I first discovered dead brood in one hive in February, 1884, and by April 1, I found that all of my hives had dead brood in them. I could find a few cells with brown mucus, and sometimes small holes in the caps. The bees swarmed rapidly, and the swarms were large. Swarms put in new hives on foundation would soon fill up, and have plenty of brood, and some would be dead, whilst others would be hatching. I could invariably find that all the dead brood had a deposit sticking to them, especially on the legs, resembling rust. Sometimes they would hatch with this rust on them, and be very weak, hardly able to crawl, and with crimped or defective wings; others were exceedingly small, very little brown mucus to be seen, and if a colony was rendered queenless, they would be almost certain to clean out all the dead brood before they would have another laying queen. I am satisfied that the same derangement is quite extensive in this State. I do not think that I have ever lost a colony from that cause. If I only had a few colonies, I would expect soon to have them all right by using salicylic acid, as directed by Mr. Muth. I have experimented enough to have confidence in it, but with 150 colonies all affected, and all the bees in this section of country in the same condition, I desire a more convenient remedy.—Birdville, Tex.

DR. C. C. MILLER says: "If it is foul brood, here is a good chance to try Frank Cheshire's phenol treatment."

J. E. POND, JR., replies as follows: "The indications are that the trouble is foul brood; still the symptoms given are not precisely in all respects like those of that disease. It would require an examination on my part to enable me to give a positive diagnosis. If the bees were mine, with only my present knowledge of them, I should use the method and remedy found so successful by Mr. Frank Cheshire, of England, an account of which has been lately published in the BEE JOURNAL."

H. R. BOARDMAN remarks thus: "The question is well answered in part in the asking. The 6 heaviest colonies have the diarrhea, because they have commenced rearing brood under unfavorable conditions; while the rest do not have it because they have not commenced breeding. My remedy is to put the colonies affected into a room provided with a stove and made perfectly dark. The hives are raised from the bottom and the

covers removed, thus giving a free circulation of air directly through the hives. Then raise the temperature to 60° or 65°, and continue it for several hours. This will give temporary relief, and may be repeated at intervals of 2 or 3 days."

DR. G. L. TINKER says: "I never saw a case of foul brood, but I should judge it to be that from the description given. I believe that Mr. Frank Cheshire's method of treating it with phenol will be found superior to all others. He has pointed out the cause of failure where failure has occurred, and that seems to be the infection of the queen. The remedy is manifest; give the colony a healthy queen, and go on with the treatment. There is every reason to believe that where phenol is properly used, all infection of other colonies will cease."

Remedy for Destroying Plant-Lice.

Query, No. 31.—What can I put on my plum-trees to destroy a small, green louse that comes when the tree is in full bloom and as the leaves start to grow? It gets on the under side of the leaves and the leaves curl up, and the bloom turns yellow and falls off. I can do nothing for them. I would like some remedy that will not injure my bees while working on the bloom.—R. P. W.

PROF. A. J. COOK answers as follows: "After many experiments, I find no application that serves so effectively to destroy plant-lice as the kerosene and soap mixture. This is made as follows: A quart of soft soap (hard soap will do) is dissolved in a gallon of water, and all heated to the boiling point; while yet hot a pint of kerosene is thoroughly stirred in. This is sprayed on the affected trees, and destroys the lice thoroughly. If it is feared that it will prevent the bees' working, its use may be deferred until the blossoms fall."

Convention Notices.

The next meeting of the Union Bee-Keepers' Association of Western Iowa, will be held on April 25, 1885, at Earlham, Iowa.

M. E. DARBY, Sec.

The Progressive Bee-Keepers' Association of Western Illinois will meet in Bushnell, Ills., on Thursday, May 7, 1885. Let every bee-keeper who can, be present and enjoy the meeting.

J. G. NORTON, Sec.

The New Jersey and Eastern Bee-Keepers' Association will hold their next annual convention at Cooper Union, in New York City, beginning on Wednesday, March 11, 1885, and to continue two days or more. The committee promise a good programme, and extend a cordial invitation to all. W. B. TREADWELL, Ass't. Sec.

The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend.

E. J. HADLEY, Sec.

Special Notices.

We often get a number of notices and advertisements on Mondays, intended for the next BEE JOURNAL. As we close the forms on Saturdays, all such notices must be here on Saturday morning, or cannot appear until the following week.

Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again."

For two subscribers for the Weekly BEE JOURNAL (or 8 for the Monthly) for one year, we will present a Pocket Dictionary, and send it by mail postpaid.

Advertisements.

Albino and Italian QUEENS at Reduced Rates!

THOSE desiring to secure Pure Albino Queens, will best accomplish their object by purchasing of the original producer of this valuable and beautiful race of Bees. For Circulars, address,

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in presents given away. Send us 5 cents postage, and by mail you will get free a package of goods of large value, that will start you in work that will at once bring you in money faster than anything else in America. All about the \$200,000 in presents with each box. Agents wanted everywhere, of either sex, of all ages, for all the time, or spare time only, to work for us at their own homes. Fortunes for all workers absolutely assured. Don't delay. H. HALLETT & CO.

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Will sell 300 to 400

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Pure Italians, 1 to 5	\$6 50
" " 5 to 20	6 00
" " 20 or more	5 75
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TERMS and Conditions as follows: Orders will be booked only when accompanied by the Cash, and will be filled in their proper turn. I will ship some time in the month of May, and the exact date must be left in my discretion to be governed by the circumstances and the weather. Will notify before shipment. Will **Guarantee Safe Arrival** at last Express Station, and will guarantee satisfaction. 9D4t

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WE have bought a large stock of Choice Yellow Beeswax, and can furnish Dunham Comb Foundation for brood comb for 50c. per lb. Thin Dunham for Sections, 55c. per lb. Extra thin Vandervort, 10 to 12 square feet to the lb., 60c. per lb. Will work up wax into Foundation for 10, 15 and 20c. per lb. To induce our customers to order Foundation early in the season, we will allow 10 per cent. discount on all orders received before the 1st of May.

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5 in one lot, each, \$3.50; 10, each, \$3.40;
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SINGLE-WALLED HIVES, 5 in one lot,
each, \$2.50; 10, each, \$2.40; 25, each,
\$2.25; 100, each, \$2.00.

EACH HIVE has Gable Roof, 2 Section
Cases, 10 Langstroth Brood Frames, and is
complete except Sections or Extracting Frames,
which are interchangeable, and may be used in
separate cases on the same hive. For two sets of
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We now make the Victor Sections as follows:
White Pine, dovetailed, 1 or 2 lbs., per 1,000, \$6.00.
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Six All interested in Bees or 1000 colonies
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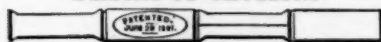
"BOSS" ONE-PIECE SECTIONS.

READ THIS.

A word of explanation in regard to the
infringement suit on the One-Piece Section,
we deem necessary at this time.

I commenced suit against A. I. Root, in
the United States Circuit Court, for the
Northern district of Ohio; Stanley Matthews
presiding. He decided that the patent was
ANTICIPATED. I have taken an
appeal to the United States Supreme Court
at Washington, which will decide the case,
and its decision will be final. If it goes
against me I will submit, but if decided in
my favor, I shall expect all who have in-
fringed will pay me damages from date of
the patent.

Some unprincipled parties are advertising
that the Courts have decided that the patent
is void. This is not the case, as it is before
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ington, at the present time. When that
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Timmons as incorporators. The stock of said
company will be divided into 1,500 shares of 20
dollars each. Books will be open for subscription
to the above stock, on Monday, Feb. 23, 1885, at
New Comerstown, Ohio. Ten per cent. of stock
subscribed payable at time of subscription; twenty
per cent. payable monthly thereafter, provided
that all stock must be paid in full by September
15, 1885. Provided, further, that full payment of
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